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Economic Benefits of Treatment: Preliminary Findings from the Persistent Effects of Treatment Studies (PETS) - Cuyahoga

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Summary of main findings

- The largest changes in earnings, crime-related costs, health care costs, and welfare payments occur between the baseline and 6-month follow-up periods
  - Earnings tend to continually increase from the baseline
  - Crime-related costs decrease significantly between the baseline and 6-month follow-up periods, but rise (slowly) in later periods
- Reductions in crime-related costs over the follow-up periods account for over 60% of the benefits from treatment
- Significant benefit-to-cost ratios were found across modalities and clients

Defining economic benefits

- *Economic benefits* are measured in terms of increased productivity and "avoided" costs
  - Earnings
  - Social welfare payments: *unemployment compensation, TANF, SSI, Disability, food stamps*
  - Health care costs: *Doctor and emergency room visits, hospitalization for mental health condition*
  - Crime-related costs: *Criminal justice (police protection, adjudication and sentencing, jail,), costs to victims (medical expenses, property damage, lost wages), theft losses*

Deciding on a perspective: society vs. the "non-treated" population

- In cost-benefit analysis, researchers sometimes distinguish between benefits to society and to the non-treated population
- The primary difference is in the treatment of "transfers" and client earnings
  - Examples of transfers are welfare benefits and the monetary value of theft losses. Since these are a redistribution of income, the net *economic effect* on society is effectively zero. Therefore, transfers are not included in the benefits to society
  - Increases in client earnings benefit clients - aside from taxes which we do not consider here. So, they are not in benefits to "non-treated"
- For public policy purposes, it can be useful to report results from both perspectives

The PETS data and sample selection

- 1231 clients completed an intake interview. Follow-up questionnaires were administered approximately 6, 12, and 24 months after the baseline interview
- To take advantage of the time series nature of the data - responses from 661 clients with data at baseline, 6, 12, and 24 months were analyzed

Survey Period	Respondents	Consistent Panel
Baseline	1237	1237
6 Months	987	868*
12 Months	1003	761
24 Months	1022	661
*For example, 868 clients completed a baseline and 6-month follow-up interview		

Establishing a baseline to measure benefits

- To estimate economic benefits from treatment, need to establish baseline measures of earnings, welfare payments, health care costs, and crime-related costs
  - What would earnings, welfare, etc. have been in the absence of treatment?
- Baseline values are then compared with values at follow-up to determine benefits
- Use values reported at intake as baseline measures

Comparing intake and follow-up responses

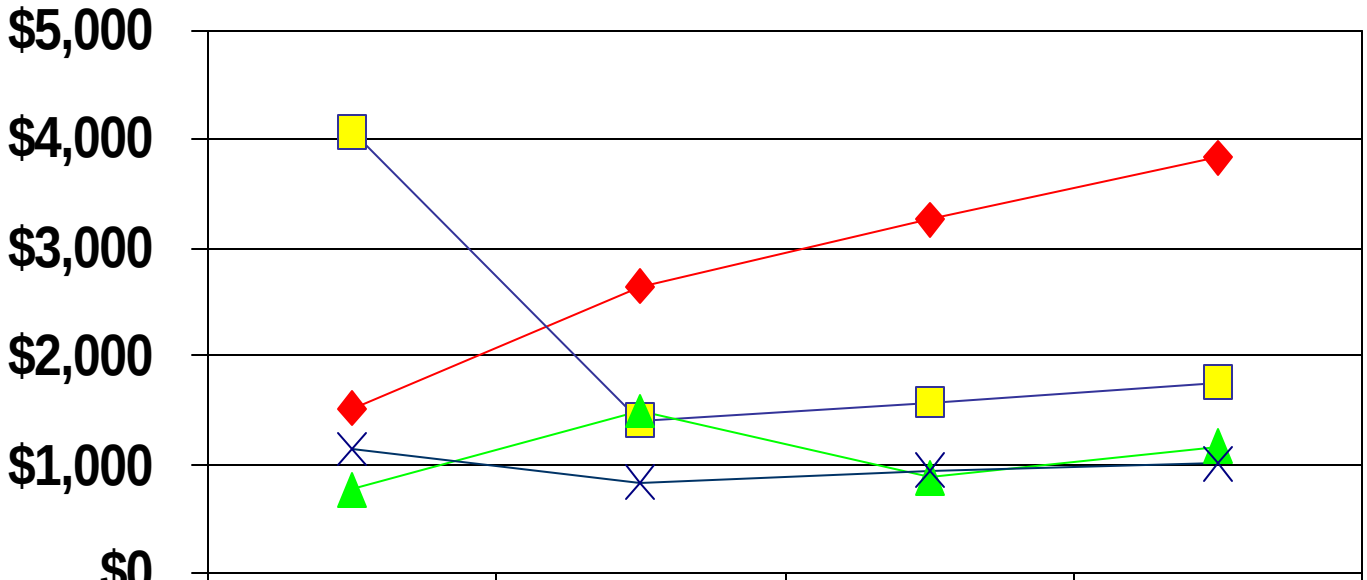
- Benefits are measured by increases in earnings or reductions in welfare, health care and crime-related costs between the intake and follow-up periods
  - *Similar* to pre/post-treatment framework - except PETS 6-month (and possibly other) follow-up periods include the treatment period that resulted from intake
- Earnings and welfare payments correspond to 1 month prior to intake and follow-up questionnaires
  - Activities in the month prior to entering treatment may be atypical and may not serve as a good baseline measure
- Most other questions ask about the 6 months prior to the intake and follow-up questionnaires

Data sources for estimating cost benefits

- Earnings & welfare payments - as reported by clients
- Health care costs -National estimates in published literature on per-visit costs (AMA, AHA)
- Crime-related costs
  - Calculated using national averages on: Cost of police protection per crime, Cost of judicial and legal per arrest, $ per day in jail per person, victim losses per crime (medical costs, lost wages, property damages), theft losses per crime
  - Data came from U.S. Department of Justice publications on crimes, criminal victimization, and justice expenditures
  - For each client, separate crime-related costs were estimated by type of crime and then aggregated to get a total for each client

Average earnings and costs over time for all clients

6-Month Averages per Client (N=661) - in 1997 dollars



	Baseline	6-Months	12-Months	24-Months
Earnings	$1,514	$2,636	$3,251	$3,831
Crime	$4,075	$1,415	$1,572	$1,758
Health	$776	$1,492	$872	$1,173
Welfare	$1,139	$846	$952	$1,011

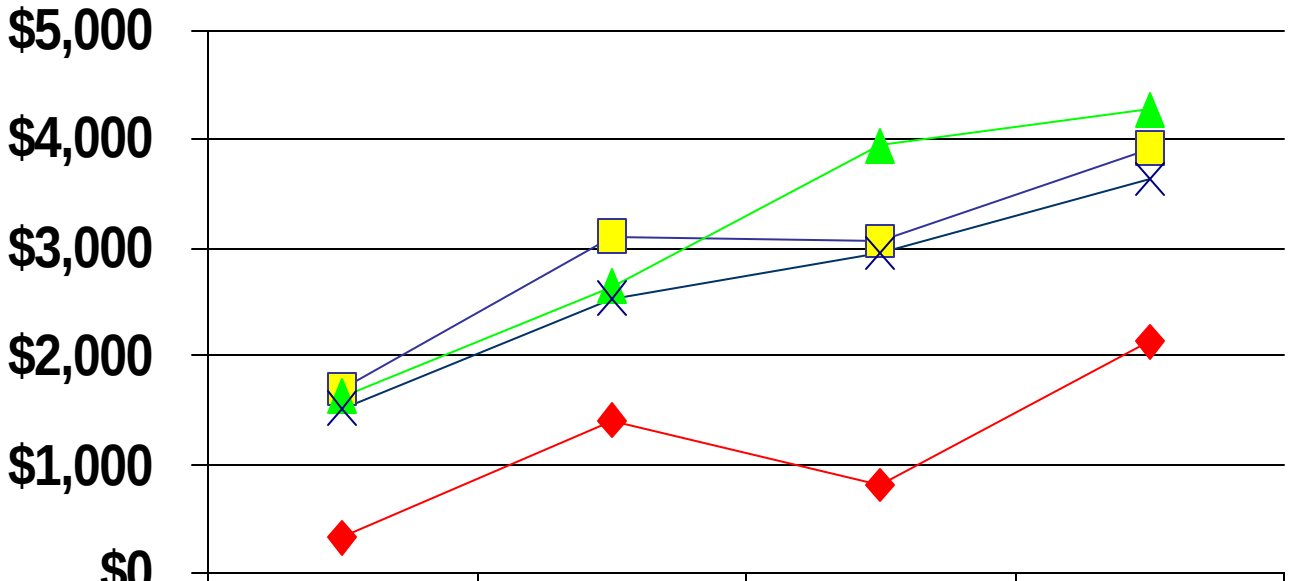
Average earnings and costs over time by gender

6-Month Averages per Client - in 1997 dollars

		Baseline	6-Months	12-Months	24-Months
Male (N=357)	Earnings	$ 2,090	$ 3,675	$ 4,495	$ 5,379
	Crime	$ 4,570	$ 1,855	$ 1,764	$ 1,686
	Health Care	$ 635	$ 1,452	$ 1,006	$ 849
	Welfare	$ 541	$ 407	$ 485	$ 583
Female (N=303)	Earnings	$ 839	$ 1,411	$ 1,785	$ 2,000
	Crime	$ 3,475	$ 896	$ 1,350	$ 1,847
	Health Care	$ 943	$ 1,542	$ 717	$ 1,560
	Welfare	$ 1,843	$ 1,360	$ 1,499	$ 1,517

Average earnings over time by age group

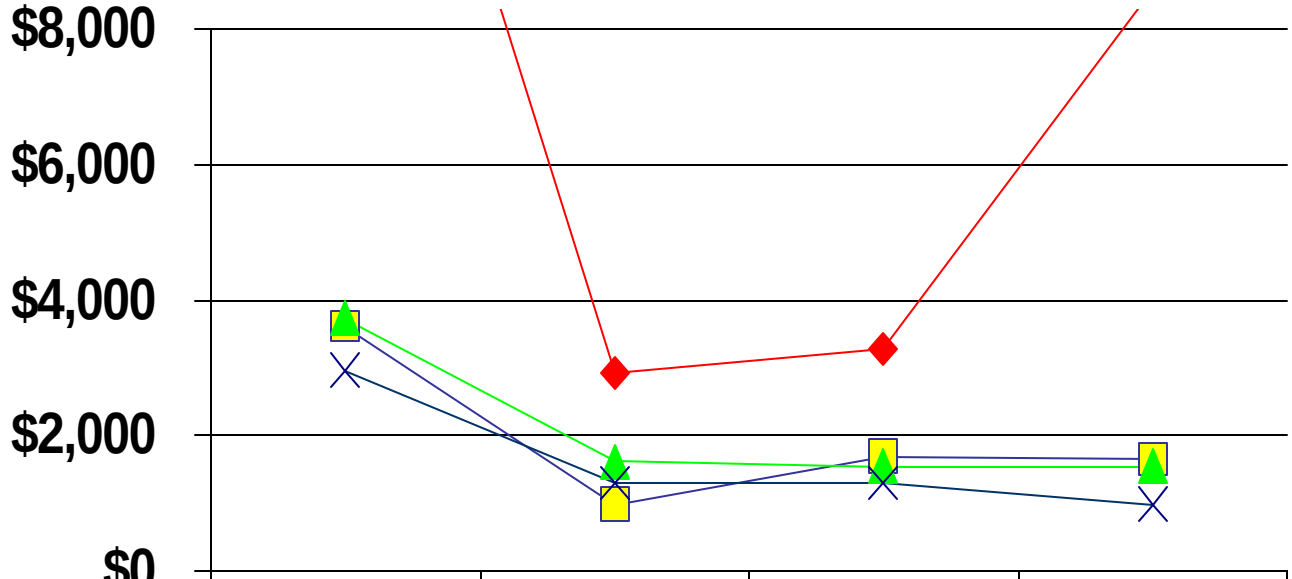
6-Month Averages per Client (N=661) - in 1997 dollars



	Baseline	6-Months	12-Months	24-Months
18-21 (n=35)	$340	$1,409	$820	$2,134
22-30 (n=118)	$1,700	$3,101	$3,062	$3,925
31-40 (n=266)	$1,630	$2,641	$3,947	$4,274
41+ (n=203)	$1,514	$2,535	$2,958	$3,633

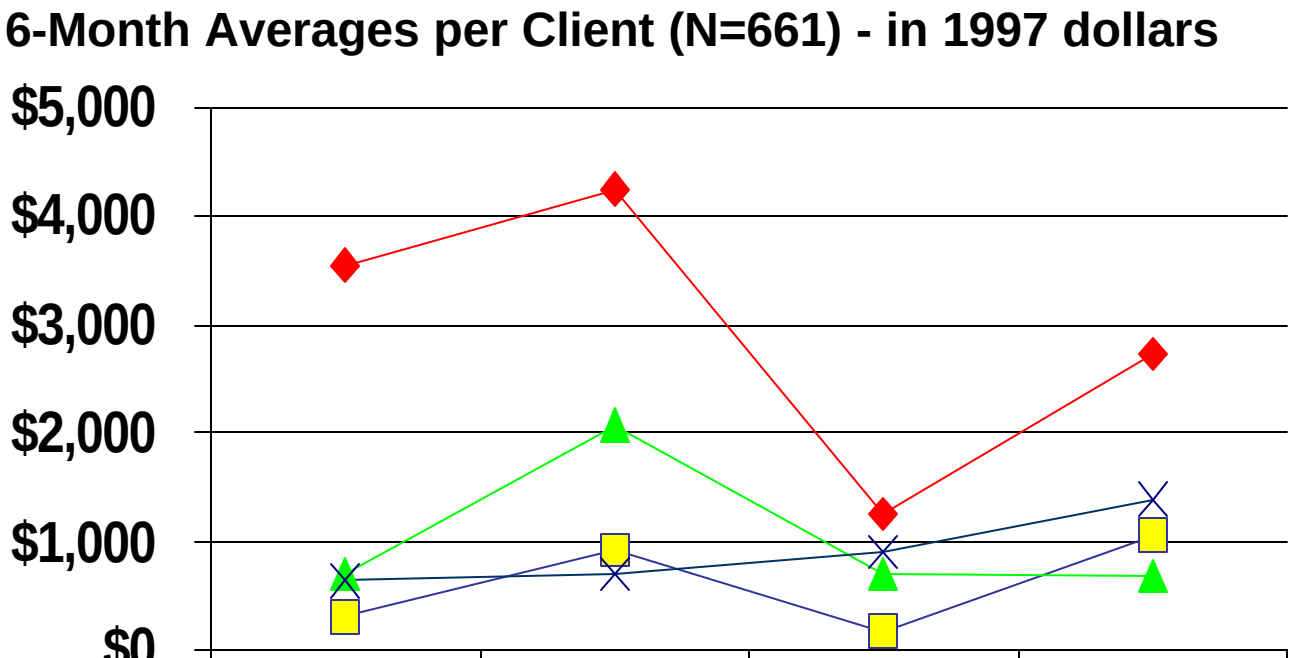
Average crime-related costs over time by age group

6-Month Averages per Client (N=661) - in 1997 dollars



	Baseline	6-Months	12-Months	24-Months
18-21 (n=35)	$15,621	$2,919	$3,282	$8,588
22-30 (n=118)	$3,581	$985	$1,684	$1,671
31-40 (n=266)	$3,732	$1,625	$1,538	$1,541
41+ (n=203)	$2,972	$1,288	$1,297	$971

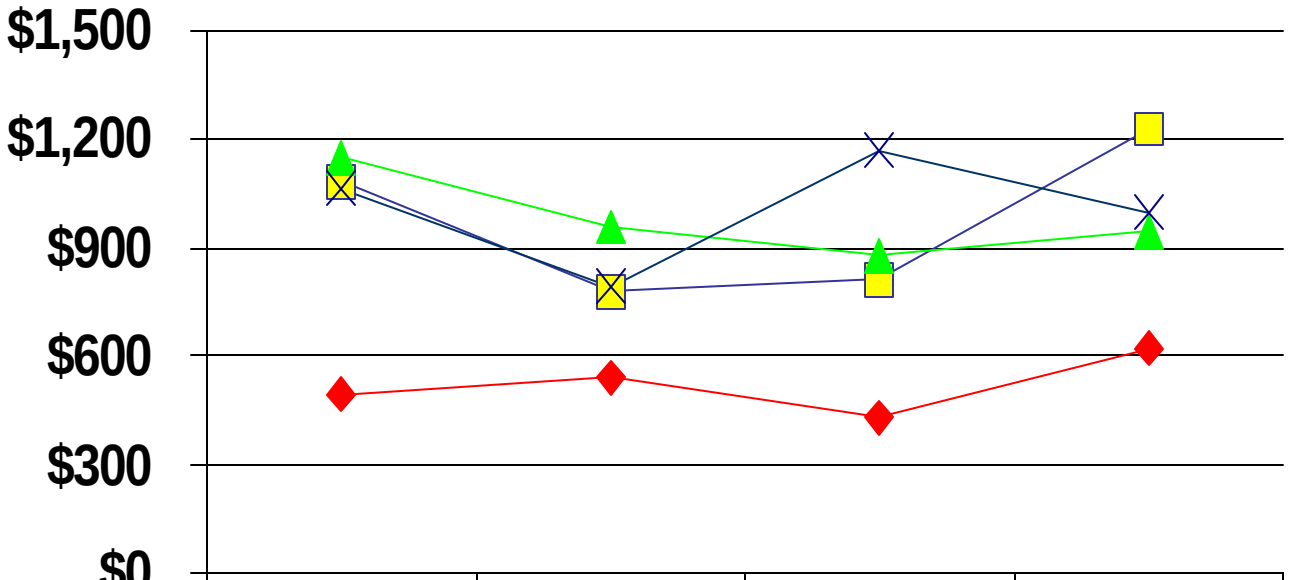
Average health care costs over time by age group



	Baseline	6-Months	12-Months	24-Months
18-21 (n=35)	$3,541	$4,257	$1,266	$2,738
22-30 (n=118)	$308	$926	$187	$1,062
31-40 (n=266)	$699	$2,074	$694	$675
41+ (n=203)	$631	$715	$911	$1,389

Average welfare/public assistance over time by age group

6-Month Averages per Client (N=661) - in 1997 dollars



	Baseline	6-Months	12-Months	24-Months
18-21 (n=35)	$493	$541	$428	$622
22-30 (n=118)	$1,083	$779	$813	$1,228
31-40 (n=266)	$1,152	$956	$877	$944
41+ (n=203)	$1,066	$790	$1,170	$1,001

Average economic benefits of substance abuse treatment

Average 6-month benefits per client derived as difference between baseline and follow-up periods (N=661)- 1997 Dollars

Society	Non-treated		6-Months	12-Months	24-Months
X	X	Health Care	-715	-96	-397
X		Earnings*	1,122	1,738	2,318
	X	Welfare/Public Assistance*	293	188	129
X	X	Crime, excluding Theft Losses	2,179	2,108	1,871
	X	Theft Losses	481	396	446
X		Total Benefits per Client to Society	2,585	3,750	3,791
	X	Total Benefits per Client to Non-treated	2,238	2,596	2,049

* Extrapolated from 1 to 6 months

Benefits to society by modality for 24-months following baseline interview

- Modality and treatment costs based on initial (i.e., "index") episode following baseline, info from administrative records
  - able to identify an index treatment episode for 604 clients
  - treatment costs captured only up to 12-month interview date

	Total (N=604)	Detox (N=72)	Methadone (N=62)	Short-term Rehab (N=111)	Long-term Rehab (N=26)	Intensive Outpatient (N=217)	Outpatient (N=115)
Total Benefits	$14,102	$8,969	$15,798	$13,226	$11,347	$16,147	$14,226
Treatment Costs	$2,193	$1,859	$3,371	$1,998	$4,992	$1,695	$2,035
Benefits to Costs Ratio	6.4	4.8	4.7	6.6	2.3	9.5	7.0

*1 client received treatment in a hospital. This client is included in the overall average.

Benefits to non-treated population by modality for 24-months following baseline

	Total (N=604)	Detox (N=72)	Methadone (N=62)	Short-term Rehab (N=111)	Long-term Rehab (N=26)	Intensive Outpatient (N=217)	Outpatient (N=115)
Total Benefits	$9,456	$3,096	$8,158	$11,256	$9,975	$10,486	$10,417
Treatment Costs	$2,193	$1,859	$3,371	$1,998	$4,992	$1,695	$2,035
Benefits to Costs Ratio	4.3	1.7	2.4	5.6	2.0	6.2	5.1

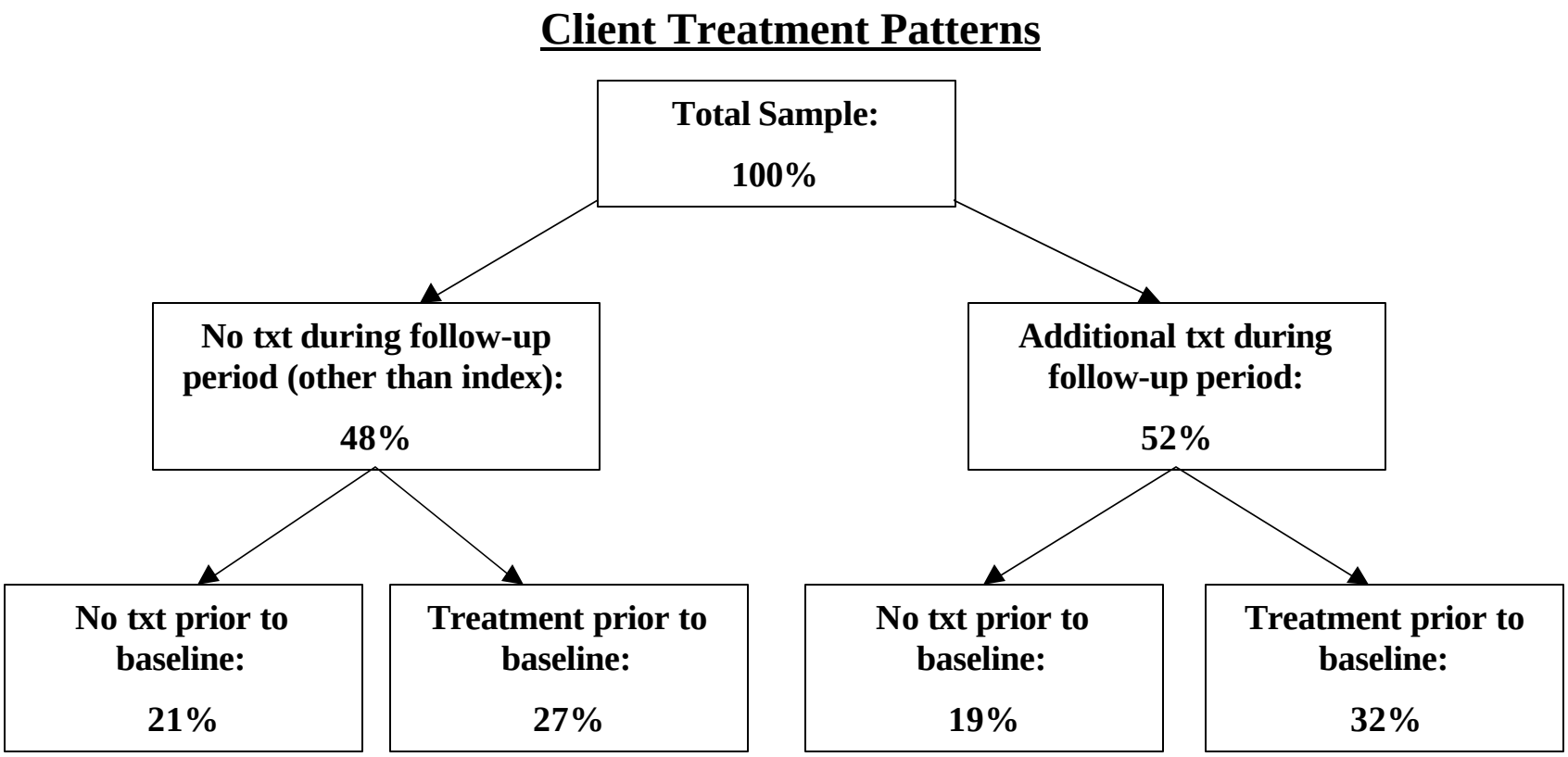
*1 client received treatment in a hospital. This client is included in the overall average.

Previous analysis did not account for readmission to treatment

- Accounting for Readmission to Treatment
  - Added benefits and treatment costs
  - Currently capturing benefits from all treatment episodes but only counting costs for initial treatment

- Initial look - divide population up into those who do and do not return to treatment

Accounting for readmission to treatment



Benefits to society for 24 months following baseline interview by treatment history

Social cost-benefit ratios for clients, by status regarding prior and subsequent substance abuse treatments

Sample	No treatments prior to baseline	Treatments prior to baseline	All
No treatment During Follow-up Period	9.2	6.2	7.2
Treatment During Follow-up Period	5.1	4.6	4.9
All	7.9	5.5	6.4

Benefits to non-treated for 24 months following baseline by treatment history

Non-treated population cost-benefit ratios for clients, by status regarding prior and subsequent substance abuse treatments

Sample	No treatments prior to baseline	Treatments prior to baseline	All
No Treatment During Follow-up Period	4.9	5.1	5.1
Treatment During Follow-up Period	3.6	2.4	3.0
All	4.7	3.8	4.3

Summary of main findings

- The largest changes in earnings, crime-related costs, health care costs, and welfare payments occur between the baseline and 6-month follow-up periods
  - Earnings tend to continually increase from the baseline
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Future refinements

- Improve our estimates of costs (treatment and societal)
  - Criminal justice data is being collected from the county
- Consider alternatives to using intake values as baseline?
  - Would values at 6-month follow-up be better baseline for 12-month follow-up, and so on?
  - Consider using a "minimally" treated population as a quasi-control group. This approach has its own set of limitations
- Identify and quantify other factors - e.g., taxes from client earnings
- Incorporate data from additional follow-up periods

What are further important questions and issues to pursue?

- What are potential areas to improve this analysis?
- Are there alternative methods to estimate values?
- What additional/alternative analyses can be done?
- What weaknesses are there that can't be addressed with the PETS data base? What are the implications of these weaknesses?
- What would be important next steps?